REMARKS

This is responsive to the Office Action mailed October 4, 2002. In that Office Action, claims 1, 2, 5-8, 10-12, 18-20, 22-28, 33-37, and 41-43 were rejected under 35 U.S.C. §103(a) as being unpatentable over McCormick et al., U.S. Patent No. 5,524,844 ("McCormick") in view of Weinberg et al., U.S. Patent No. 5,916,651 ("Weinberg"). Claims 9, 13, 16, 29-32, 38, and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over McCormick in view of Weinberg and further in view of Koza et al., U.S. Patent No. 5,431,767 ("Koza"). Claims 17 and 40 were rejected under 35 U.S.C. §103(a) as being unpatentable over McCormick in view of Weinberg and further in view of admitted prior art. The Examiner's indication that claims 3, 4, and 21 recite allowable subject matter is noted with appreciation. With this Response, claim 18 has been amended. It is believed that all claims are now in a condition for allowance.

Claim 1 relates to a method of automatically applying a splicing tape to a roll of sheet material that includes an outer-most layer. The method of claim 1 includes lifting a portion of the outer-most layer away from a remainder of the roll, and cutting this lifted portion to form a leading edge. A splicing tape is applied to the wound portion of the roll. The leading edge is adhered to an outer surface of the applied splicing tape. It is respectfully submitted that none of the cited references teach or otherwise suggest at least these limitations.

In particular, the Examiner has relied upon McCormick as teaching lifting and cutting an outer-most layer, applying an adhesive tape to the wound portion of the roll, and adhering the leading edge of the outer-most layer to the adhesive tape. The Examiner has referenced Weinberg as teaching an adhesive tape positioned between the roll and the outer-most layer, stating that McCormick can be modified in view of the Weinberg adhesive tape to arrive at the invention of claim 1. It is respectfully submitted that a requisite suggestion for this proposed modification cannot be identified in that pursuant to the teachings of McCormick, it is impossible to apply the splicing tape such that an outer surface thereof is adhered to the outer-most layer as otherwise required by claim 1. That is to say, the Examiner's acknowledgement that McCormick fails to show the outer-most layer covering "only a portion of the tape" is not only accurate, it represents a distinct limitation of McCormick that cannot be obviated by simply using a different splicing tape, such as that of Weinberg.

McCormick includes a web material tensioning apparatus 60 and a web cutting and tape application apparatus 66 that in turn includes a tape application mechanism 72. Operation of the tensioning apparatus 60 and the cutting/application apparatus 66 is premised upon the adhesive tape being placed over the cut leading edge of the outer-most layer. That is to say, a bottom of the adhesive tape is applied to the cut leading edge, as well as a remainder of the roll (see McCormick, column 1, lines 45-50). As shown in FIG. 6 of McCormick, prior to tensioning apparatus 60 engagement of the outer-most layer, the cutting/application apparatus 66, including the tape application mechanism 72, is positioned in highly close proximity to the roll 70, with the tape application mechanism 72 virtually in contact with the roll 70. During the web tensioning steps illustrated in FIGS. 7-9 of McCormick, this highly close positioning of the cutting/application apparatus 66 relative to the roll 70 does not change. Thus, based upon a comparison of FIGS. 8 and 9, once the outer-most layer 150 is lifted from the roll 70, there is simply not enough space between the lifted layer 150 and the roll 70 relative to the position of the tape application mechanism 72 to otherwise allow for applying the adhesive tape between the outer most layer 150 and the roll 70 (so as to otherwise satisfy the requirement of claim 1, whereby the cut leading edge of the outer most layer is adhered to an outer surface of the tape). The teachings of McCormick are thus limited to applying the adhesive tape over the cut leading edge.

Further, even if sufficient space were available between the lifted outer-most layer 150 and the roll 70, the McCormick device, and thus the method of operation, still cannot achieve applying tape between the cut leading edge and the roll. In particular, McCormick relies upon vacuum cups 140 to lift the outer-most layer 150. As shown in FIG. 9, the cutting/application apparatus 66, including the tape application mechanism 72, is positioned behind the vacuum cups 140 relative to the lifted layer 150. Clearly, the adhesive tape cannot be "applied" to the leading end until the leading end is actually formed, meaning that tape application cannot occur until after a cut has been made. Because the vacuum cups 140 are positioned "downstream" of the tape application mechanism 72, as soon as the outer-most layer 150 is cut, tensioning or lifting provided by the vacuum cups 140 is lost relative to the cut section, such that the newly formed portion of the leading edge immediately falls back to the roll 70. Because of this

unavoidable result, it is impossible for McCormick to apply the adhesive tape between the cut leading edge and the roll, and thus impossible to adhere the cut leading edge to an outer surface of the applied tape as otherwise required by claim 1. Thus, regardless of whether the tape of Weinberg is employed with the method of McCormick (or any other tape for that matter), the limitations of claim 1 are not taught or otherwise made obvious as they cannot be achieved with the teachings of McCormick. As such, it is respectfully submitted that claim 1 is allowable.

Claims 2-17 depend from claim 1. As previously described, amended claim 1 is not taught or otherwise suggested by the cited references. Therefore, claims 2-17 are similarly allowable.

Amended claim 18 relates to an apparatus for applying a splicing tape to a roll of sheet material, and includes a sheet engagement mechanism, a sheet cutter, and a taping device. In this regard, the apparatus is adapted to maintain engagement between an outer-most layer of the roll and the sheet engagement mechanism following a cutting operation by the sheet cutter. Neither McCormick nor any of the other cited references teach or otherwise suggest at least these limitations.

In particular, and as previously described with respect to claim 1, the vacuum cups 140 of McCormick, that otherwise effectuate lifting of the outer-most layer 150, are positioned downstream of the cutting/application apparatus 66. Thus, once the outer-most layer 150 is cut, the newly-formed leading edge is no longer "connected" to or tensioned by the vacuum cups 140, and thus falls back to the roll 70. Therefore, McCormick does not teach or otherwise suggest a sheet engagement mechanism that maintains engagement with the outer-most layer following a cutting operation. In fact, McCormick teaches away from this configuration. As such, it is respectfully submitted that amended claim 18 recites allowable subject matter.

Claims 19-41 depend from amended claim 18. As previously described, amended claim 18 is not taught or otherwise suggested by the cited references. Therefore, claims 19-41 are similarly allowable.

Claim 42 relates to a method of automatically applying a splicing tape to a roll of sheet material and includes establishing an imaginary application line relative to a circumference of the roll. Further, the method of claim 42 includes lifting and cutting the outer-most layer,

applying splicing tape to the roll, and adhering a cut leading edge to an outer surface of the applied splicing tape. As previously described with respect to claim 1, McCormick does not teach or suggest adhering the cut leading edge to an outer surface of the applied splicing tape, regardless of the type of tape being applied. Pointedly, it is impossible for McCormick to provide this result. Further, McCormick does not teach or suggest establishing an imaginary application line. Instead, McCormick simply cuts the outer-most layer and immediately applies adhesive tape over the cut leading edge. Because the tape is immediately applied, and because there is virtually no space between the leading edge and the wound roll, the rudimentary approach of McCormick does not envision the need for establishing an imaginary application line, let alone teach or suggest doing so. For at least these reasons, then, it is respectfully submitted that claim 42 recites allowable subject matter.

Claim 43 depends from claim 42. As previously described, claim 42 is not taught or otherwise suggested by the cited references. Therefore, claim 43 is similarly allowable.

CONCLUSION

It is believed that all claims are now in a condition for allowance. Notice to that effect is respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 500471.

Attached hereto is a marked-up version of the changes made to the specification and/or the claims by the current Amendment. The attached pages are captioned **"VERSION WITH MARKINGS TO SHOW CHANGES MADE".**

The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this response.

Respectfully submitted,

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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Commissioner for Patents, Washington, D.C., 20231 on this 27th day of **December, 2002**.

By_____
Name: **Timothy A. Czaja**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LeRoy A Kuta et al.	Examiner:	Mark A. Osele
Serial No.:	09/883,144	Group Art Unit:	1734
Filed:	June 15, 2001	Docket:	56731USA9A (M120.137.101)
Due Date:	January 4, 2003		
Title:	METHOD AND APPARATUS FOR AUTOMATICALLY APPLYING A FLYING SPLICING TAPE TO A ROLL OF SHEET MATERIAL		

OIPE JAN 0 3 2003 PATENT & TRADEMARK OFFICE

AMENDMENT AND RESPONSE

Commissioner for Patents
Washington, D.C. 20231

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TC 1700

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Dear Sir/Madam:

This Amendment is responsive to the Office Action mailed October 4, 2002. Please amend the above-identified patent application as follows:

IN THE CLAIMS

Please amend claim 18 as follows:

1. A method of automatically applying a splicing tape to a roll of sheet material defining a width and providing an outer-most layer, the method comprising:

lifting a portion of the outer-most layer away from a remainder of the roll;

cutting the lifted portion of the outer-most layer to form a leading edge of the roll that is otherwise spaced from a remainder of the roll such that the roll is defined by a wound portion and an unwound portion, the cut being made at a known spatial location relative to a circumference of the wound portion such that the leading edge is radially aligned with a defined application line on the wound portion;

applying the splicing tape to the wound portion of the roll at the defined application line, the splicing tape extending across at least a portion of the width of the roll; and

adhering the leading edge to an outer surface of the splicing tape such that the outer-most layer covers a first section of the splicing tape and a second section of the splicing tape remains exposed adjacent the leading edge.

2. The method of claim 1, wherein lifting a portion of the outer-most layer includes establishing a spacing to allow cutting of the outer-most layer.

3. The method of claim 1, further comprising:

moving the leading edge a further distance from the defined application line following the cutting step to provide spacing for applying the splicing tape.

4. The method of claim 3, wherein the step of moving the leading edge a further distance includes:

engaging the outer-most layer adjacent the leading edge with an engagement mechanism;

maintaining a position of the outer-most layer against a remainder of the roll downstream of a point of an interface between the engagement mechanism and the outer-most layer with a hold down device; and

maneuvering the engagement mechanism away from the defined application line, the hold down device maintaining a tension in the outer-most layer as the leading edge is maneuvered.

5. The method of claim 1, wherein following the cutting step, the outer-most layer is defined by an unwound section, including the leading edge, and a wound section extending from the unwound section to a second outer-most layer otherwise wound to a remainder of the roll, and further wherein the defined application line is at a transition of the outer-most layer to the second outer-most layer.

6. The method of claim 1, wherein the step of applying a splicing tape includes applying the splicing tape straight across the roll.

7. The method of claim 6, wherein the splicing tape is applied substantially parallel to an axis of the roll.

8. The method of claim 6, wherein the splicing tape is applied at an angle relative to an axis of the roll.

9. The method of claim 1, wherein the splicing tape has a relatively uniform width and a split line, and further wherein the step of applying the splicing tape includes substantially centering the split line relative to the defined application line.

10. The method of claim 1, wherein the splicing tape has a relatively uniform width, and further wherein the splicing tape is applied such that upon subsequent adhering of the leading edge, approximately one-third of the splicing tape width is covered by the outer-most layer.

11. The method of claim 1, further comprising:

providing a taping device for applying the splicing tape; and

providing a cutting mechanism for cutting the outer-most layer;

wherein the taping device is mechanically coupled to the cutting mechanism such that a spatial position of the cutting mechanism relative to a spatial position of the taping device is known.

12. The method of claim 1, wherein the splicing tape includes an outer tape element having an adhesive on an outer surface thereof and a release liner placed over the adhesive, the method further comprising:

removing at least a section of the release liner after applying the splicing tape to the wound portion of the roll.

13. The method of claim 12, further comprising:

providing a taping device including a tape head and a liner removal device; and

directing the taping device across a width of the roll to apply the splicing tape with the tape head and remove at least a section of the release liner with the liner removal device with a single pass of the taping device.

14. The method of claim 1, wherein the roll of sheet material is defined by a first side and a second side, and further wherein the step of applying the splicing tape includes extending the splicing tape to the second side, the method further comprising:

sensing a location of the second side;

positioning a tape cutter at the second side of the roll based upon the sensed location; and

cutting the splicing tape with the tape cutter to a defined location relative to the roll such that a trailing edge of the splicing tape is substantially aligned with the second side of the roll.

15. The method of claim 14, wherein the splicing tape is applied by a taping device including a placement roller, and wherein the step of applying the splicing tape further includes:

sensing a location of the first side;

aligning the placement roller with the first side of the roll based upon the sensed location of the first side; and

prompting the taping device to apply the splicing tape such that a leading end of the splicing tape is substantially aligned with the first side of the roll.

16. The method of claim 1, wherein the step of adhering a leading edge of the roll to an outer surface of the splicing tape includes passing a roller over the leading edge to press the leading edge against the outer surface of the splicing tape.

17. The method of claim 1, further comprising:

sensing a spatial location of the outer-most layer before the step of lifting the outer-most layer.

18.(Amended) An apparatus for applying a splicing tape to a roll of sheet material, the apparatus comprising:

a sheet engagement mechanism configured to engage and maneuver an outer-most layer of the roll;

a sheet cutter configured to cut the outer-most layer of the roll across a width thereof; and

a taping device including a tape head configured to apply a splicing tape to the roll;

wherein the sheet engagement mechanism, the sheet cutter and the taping device are connected to one another at known spatial locations such that the tape head applies the splicing tape along a tape line corresponding with a cut line provided by the sheet cutter, the apparatus being adapted to maintain engagement between the outer-most layer of the roll and the sheet engagement mechanism ~~during consecutive~~ following a cutting operation ~~of~~ by the sheet cutter ~~and the taping device~~.

19. The apparatus of claim 18, wherein the tape head is configured to apply a strip of splicing tape along a defined tape application line, and further wherein connection of the sheet engagement mechanism, the sheet cutter and the taping mechanism is configured such that the sheet cutter cuts an outer-most layer of the roll, otherwise lifted from a remainder of the roll by the sheet engagement mechanism, to form a leading edge that is spatially alignable with the defined tape application line.

20. The apparatus of claim 18, wherein the sheet material cutter is directly coupled to the sheet material engagement mechanism.

21. The apparatus of claim 20, wherein the combination sheet material engagement mechanism and cutter are configured to be moveable relative to the tape head.

22. The apparatus of claim 20, wherein the combination sheet material engagement mechanism and cutter are transitionable from a first position, in which the sheet material cutter is aligned with a tape application line defined by the tape head, to a second position in which the sheet cutter is spaced from the tape application line.

23. The apparatus of claim 22, further comprising:

an actuator for moving the combination sheet material engagement mechanism and cutter from the first position to the second position.

24. The apparatus of claim 22, further comprising:

a frame maintaining the taping device; and

a linkage connecting the combination sheet material engagement mechanism and cutter to the frame;

wherein the linkage directs the combination sheet material engagement mechanism and cutter between the first and second positions.

25. The apparatus of claim 22, further comprising:

a hold down device connected to and spaced from the combination sheet material engagement mechanism and cutter, the hold down device configured to remain stationary as the combination sheet material engagement mechanism and cutter is transitioned from the first position to the second position.

26. The apparatus of claim 25, wherein the hold down device includes a plurality of spring-loaded rollers.

27. The apparatus of claim 18, wherein the sheet material engagement mechanism includes a vacuum source.

28. The apparatus of claim 18, wherein the sheet cutter and the tape head are configured to cut sheet material and apply tape, respectively, along parallel lines.

29. The apparatus of claim 18, wherein the taping device further includes a track for guiding the tape head across a defined path.

30. The apparatus of claim 18, wherein the tape head includes:

a supply reel for maintaining a roll of splicing tape; and

a placement roller for applying a strip of the splicing tape to the roll.

31. The apparatus of claim 30, wherein the splicing tape includes a release liner releasably secured to an outer, adhesive-bearing surface of an outer tape element, and wherein the taping device further includes:

a liner removal mechanism for removing at least a portion of the release liner from the outer tape element, the liner removal mechanism being positioned behind the placement roller such that the taping mechanism is capable of removing at least a portion of the release liner immediately after applying the splicing tape.

32. The apparatus of claim 31, wherein the liner removal mechanism includes a take-up reel.

33. The apparatus of claim 18, wherein the taping device further includes a tape cutter for cutting the splicing tape, the tape cutter being positioned adjacent the tape head such that the splicing tape can be cut immediately after being applied to the roll.

34. The apparatus of claim 33, wherein the roll of the sheet material is defined by a first side and a second side, the splicing tape being applied from the first side to the second side, the taping device further comprising:

a roll side sensor for sensing the first side and the second side locations;

wherein the tape cutter is positionable based upon a signal from the roll side sensor.

35. The apparatus of claim 34, wherein applying of the splicing tape by the tape head is based upon a signal from the roll side sensor indicating a location of the first side of the roll.

36. The apparatus of claim 33, wherein the tape cutter includes a rotary cutter.

37. The apparatus of claim 36, wherein the rotary cutter is radially maneuverable relative to the tape head.

38. The apparatus of claim 36, wherein the tape head includes a placement roller for placing the splicing tape onto the roll, wherein the taping device further includes:

a take-up reel for removing a portion of a release liner from the splicing tape;

wherein the rotary cutter is positioned between the placement roller and the take-up reel relative to a tape path defined for the splicing tape.

39. The apparatus of claim 18, wherein the taping device further includes a press down roller for pressing a leading edge of sheet material against an outer surface of splicing tape otherwise applied to the roll by the tape head.

40. The apparatus of claim 18, further comprising:

a roll sensor for sensing a spatial position of the roll relative to the sheet material engagement mechanism.

41. The apparatus of claim 18, wherein the sheet cutter includes a rotary sheet cutter.

42. A method of automatically applying a splicing tape to a roll of sheet material defining a width and including an outer-most layer, the method comprising:

establishing an imaginary application line extending transversely along a circumference of the roll;

lifting the outer-most layer away from a remainder of the roll in a region of the application line;

cutting the outer-most layer to form a leading edge, the cut being made such that the leading edge is radially alignable with the application line;

applying the splicing tape to a wound portion of the roll along the application line, the splicing tape extending across at least a portion of the width of the roll and the leading edge remaining spaced from the wound portion as the splicing tape is applied; and

adhering the leading edge to an outer surface of the splicing tape such that the outer-most layer covers a first portion of the splicing tape and a second portion of the splicing tape remains exposed.

43. The method of claim 42, wherein establishing an application line includes:

providing a sheet cutter capable of cutting along a spatial cut line;

providing a taping device capable of applying a strip of splicing tape along a spatial tape application line; and

coupling the sheet cutter and the taping device to one another such that the spatial cut line is radially aligned with the spatial tape application line.